

IN THE CLAIMS:

1 1. (Cancelled)

1 2. (Currently Amended) The method of Claim 6 wherein the step of associating fur-
2 ther comprises ~~the step of~~ producing a result representing a remainder upon dividing the
3 IP ID by the number of active links.

1 3.-5. (Cancelled)

1 6. (Previously Presented) A method for uniformly distributing data transmitted by a
2 server over a plurality of underlying links of an aggregate within a computer network,
3 comprising:

4 defining a unit of data as a datagram;

5 apportioning each datagram into at least one fragment at the server;

6 associating each fragment to an underlying link of the aggregate on the basis of an
7 Internet protocol (IP) identifier (ID) of each datagram and a number of active links of the
8 aggregate, wherein the step of associating includes:

9 logically combining the IP ID with a predetermined mask to produce a quantity,
10 right shifting the quantity a predetermined number of places,

11 establishing a threshold at which a group of data is forwarded to each underlying
12 link of the aggregate,

13 producing a result representing a remainder upon dividing the right shifted logi-
14 cally combined quantity IP ID and predetermined mask by the number of active links,
15 wherein the IP ID is a 16-bit value, the predetermined mask is 0xFF80 and predetermined
16 number of right shifted places is 7, and wherein the group of data comprises 128 IP IDs;

17 transmitting the fragment over its associated underlying link from the server to the
18 computer network.

1 7. (Original) The method of Claim 6 wherein the group of data comprises one of 128
2 different transport control protocol (TCP) fragments and 128 different user datagram pro-
3 tocol (UDP) datagrams.

1 8. (Original) The method of Claim 7 wherein each UDP datagram comprises up to
2 23 fragments.

1 9. (Currently Amended) The method of Claim ~~4~~6 further comprising:
2 loading at least one data buffer of the server with the at least one fragment;
3 fetching the fragment from the data buffer; and
4 loading at least one queue of the server with the fragment, the queue associated
5 with the underlying link.

1 10.-15. (Cancelled)

1 16. (Previously Presented) A computer readable medium, comprising:

2 the medium storing executable program instructions for uniformly distributing
3 data transmitted by a server over a plurality of underlying links of an aggregate within a
4 computer network, the executable program instructions having program instructions for:

5 defining a unit of data as a datagram;

6 apportioning each datagram into at least one fragment at the server;

7 associating each fragment to an underlying link of the aggregate on the basis of an
8 Internet protocol (IP) identifier (ID) of each datagram and a number of active links of the
9 aggregate, wherein the step of associating includes:

10 logically combining the IP ID with a predetermined mask to produce a quantity,

11 right shifting the quantity a predetermined number of places,

12 establishing a threshold at which a group of data is forwarded to each underlying
13 link of the aggregate,

14 producing a result representing a remainder upon dividing the right shifted logi-
15 cally combined quantity IP ID and predetermined mask by the number of active links,
16 wherein the IP ID is a 16-bit value, the predetermined mask is 0xFF80 and predetermined
17 number of right shifted places is 7, and wherein the group of data comprises 128 IP IDs;

18 transmitting the fragment over its associated underlying link from the server to the
19 computer network.

1 17. (Original) The computer readable medium of Claim 16 wherein the program in-
2 struction for associating comprises a program instruction for producing a result represent-
3 ing a remainder upon dividing the IP ID by the number of active links.

1 18. (Original) The computer readable medium of Claim 17 wherein the program in-
2 struction for associating further comprises program instructions for:

3 calculating the IP ID of each datagram in a sequential manner; and
4 rotating the fragments of each datagram among all the underlying links to thereby
5 ensure that all fragments having the same IP ID are provided to the same physical link of
6 the aggregate.

1 19. (Currently Amended) The computer readable medium of Claim 16 wherein the
2 program instruction for associating further comprises program instructions for:
3 logically combining the IP ID with a predetermined mask to produce a quantity;
4 right shifting the quantity a predetermined number of places; and
5 establishing a threshold at which a group of data is forwarded to each underlying link of
6 the aggregate.

1 20. (Currently Amended) The computer readable medium of Claim 19 wherein the
2 program instruction for associating further comprises the program instruction for produc-
3 ing a result representing a remainder upon dividing the right shifted logically combined
4 quantity IP ID and predetermined mask by the number of active links.

1 21. – 33. (Cancelled)

1 34. (Previously Presented) The method of claim 6 wherein the step of associating fur-
2 ther comprises apportioning data equally over the plurality of underlying links of the ag-
3 gregate within the computer network.

1 35.–46. (Cancelled)

1 47. (Currently Amended) ~~The method of claim 46~~ A method for uniformly distribut-
2 ing data transmitted by a server over a number of underlying links of an aggregate within
3 a computer network, comprising:

4 providing the plurality of links as a connection to a network node;

5 selecting one link of the plurality of links for transmitting a datagram to the net-
6 work node (hereinafter the selected link) using a round robin selection technique, the data
7 identified by an Internet protocol (IP) identifier (ID), the IP ID indicating an end point
8 destination for the data;

9 apportioning the datagram into at least one fragment;

10 performing a logical AND operation to combine the IP ID and a predetermined
11 mask, wherein the predetermined mask is 0xFF80;

12 dividing the result of the logical AND operation by the number of underlying
13 links to generate a remainder;

14 using the remainder as the link identifier;

15 associating the fragments with the selected link; and

16 transmitting the fragments over the selected link.

1 48. (Cancelled)

1 49. (Currently Amended) ~~The method of claim 48~~ A method for uniformly distribut-
2 ing data transmitted by a server over a number of underlying links of an aggregate within
3 a computer network, the comprising:

4 providing the plurality of links as a connection to a network node;

5 selecting one link of the plurality of links for transmitting a datagram to the net-
6 work node (hereinafter the selected link) using a round robin selection technique, the data

7 identified by an Internet protocol (IP) identifier (ID), the IP ID indicating an end point
8 destination for the data;

9 apportioning the datagram into at least one fragment;

10 performing a logical AND operation to combine the IP ID and a predetermined
11 mask, wherein the predetermined mask is 0xFF80 and the predetermined number of bits
12 is 7 bits;

13 right shifting the result of the logical AND by a predetermined number of bits;

14 dividing the result of right shifting by the number of underlying links to generate
15 a remainder;

16 using the remainder as the link identifier; associating the fragments with the se-
17 lected link; and

18 transmitting the fragments over the selected link.

1 50. – 62. (Cancelled)